

Product Overview

NCS20032: Operational Amplifier, High Slew Rate, Low Voltage, Rail-to-Rail Output

For complete documentation, see the data sheet.

The NCS2003 family of op amps features high slew rate, low voltage operation with rail-to-rail output drive capability. The 1.8 V operation allows high performance operation in low voltage, low power applications. The fast slew rate and wide unity-gain bandwidth (5 MHz at 1.8 V) make these op amps suited for high speed applications. The low input offset voltage (4 mV max) allows the opamp to be used for current shunt monitoring. Additional features include no output phase reversal with overdriven inputs and ultra low input bias current of 1 pA.

The NCS2003 family is the ideal solution for a wide range of applications and products. The single channel NCS2003, dual channel NCS20032, and quad channel NCS20034 are available in a variety of compact and space-saving packages. The NCV prefix denotes that the device is AEC-Q100 Qualified and PPAP Capable.

Features

- Unity Gain Bandwidth: 7 MHz at $V_S = 5\text{ V}$
- Fast Slew Rate: 8 V/ μs rising, 12.5 V/ μs falling at $V_S = 5\text{ V}$
- Rail-to-Rail Output
- No Output Phase Reversal for Over-Driven Input Signals
- Low Offset Voltage: 0.5 mV typical
- Low Input Bias Current: 1 pA typical
- NCV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable

Applications

- Current Shunt Monitor
- Signal Conditioning
- Active Filter
- Sensor Buffer

Benefits

- Operates at higher speeds
- Captures fast signal transitions
- Wide dynamic range
- Output stays stable in over-driven conditions
- Better output accuracy
- High input impedance
- Meets automotive requirements

End Products

- Motor Control Drives
- Hard Drives
- Medical Devices
- White Goods and Air Conditioners

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Rail to Rail	Channels	V _S Min (V)	V _S Max (V)	I _q Typ (mA)	V _{OS} Max (mV)	GB W Typ (MHz)	SR Typ (V/μs)	I _O Typ (mA)	ΔV _{OS} /ΔT (μV/°C)	e _N (nV/√Hz)	I _{bias} Typ (pA)	CM RR Typ (dB)	Architecture	Temperature Range (°C)	Package Type
NCS20032DMR2G	0.4	Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	Microw8™
NCS20032DR2G	0.4	Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	SOIC-8
NCS20032DTBR2G	0.4	Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	TSSOP-8
NCV20032DMR2G	0.4667	AEC Qualified PPAP Capable Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	Microw8™
NCV20032DR2G	0.4	AEC Qualified PPAP Capable Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	SOIC-8
NCV20032DTBR2G	0.4667	AEC Qualified PPAP Capable Pb-free Halide free	Active	Output	2	1.7	5.5	0.325	4	7	8	76	2	20	1	90	CMOS	-40 to 125	TSSOP-8

For more information please contact your local sales support at www.onsemi.com.

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